

# National Atmospheric Release Advisory Center

Emergency Response Modeling Service



Incident



Worldwide

National Center at LLNL



Advanced Modeling System



Expert Staff

Hazard Advisory



- Available in minutes over the internet
- Describes health effects
- Recommends protective actions

NARAC's mission is to quickly map the spread of hazardous material accidentally or intentionally released into the atmosphere in time for emergency managers to warn the public to shelter in place or evacuate specific areas. Atmospheric hazards can include nuclear, radiological, chemical and biological releases such as spills, fires or explosions.

For more information go to <http://narac.llnl.gov>

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# Range of NARAC Responses

## Chernobyl in May 1986



Dose people received after four days



Destroyed Chernobyl Unit #4

For 16 days NARAC extended its modeling system to create estimates of the doses to people and the radioactivity deposited on the ground from Europe to around the globe.

## Richmond, California in July 1993



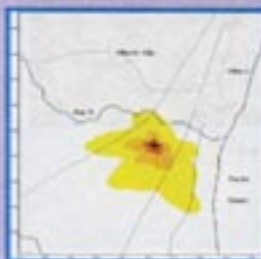
Extent of the ground-level sulfuric acid mist cloud



The sulfuric acid cloud was visible for about 1 km downwind

About 8 tons of sulfuric acid mist was released into the air when workers overheated a railroad tank car of oleum. NARAC assisted local responders to estimate the extent of the cloud. The county warned the public to shelter in place while cloud from 4-hour release passed.

## Tokaimura, Japan in September 1999



The effects from the release were localized to the plant site



Building where the uranium tank accident occurred

NARAC assisted the Japanese government in defining the extent of the dose that occurred when workers mixed an excessive amount of uranium mixed in a tank at a nuclear fuels processing plant. The criticality accident resulted in venting of a mix of nuclides with only localized effects.

## Salt Lake City Winter Olympics in January–February 2002



Cloud from a hypothetical release at the luge



NARAC modelers working with DOE team



NARAC was linked with the Olympic Safety Command Center

NARAC was part of the federal teams that supported the extensive public safety effort lead by the state of Utah.